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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,572	05/17/2006	Byung-Sue Ryu	101190-00054	5491
4372	7590	07/31/2008		
ARENT FOX LLP 1050 CONNECTICUT AVENUE, N.W. SUITE 400 WASHINGTON, DC 20036			EXAMINER EASTMAN, AARON ROBERT	
			ART UNIT 3745	PAPER NUMBER
			NOTIFICATION DATE 07/31/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Patent_Mail@arentfox.com

Office Action Summary	Application No.	Applicant(s)	
	10/579,572	RYU ET AL.	
	Examiner	Art Unit	
	Aaron R. Eastman	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/17/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show “upper bearing 140” and “lower bearing 150” in figures 9 and 10 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: Page 2 lines 22 and 24 read "...wind vanes 21..." They should read "...wind vanes 30..." The last paragraph of page 8 states that the upper and lower bearings (140 and 150 respectively) are shown in figures 9 and 10. These components are not shown in figures 9 and 10.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Number 1,248,305 (Gallagher hereinafter) in view of US Patent Number 260,085 (Coloney hereinafter).

5. In re claim 1 Gallagher discloses a wind turbine for generating power using wind force, comprising:

a support unit, comprising a lower base block (1) mounted to a ground, and a cylindrical protruding part (5, 7) extending upwards from an upper surface of the lower base block (1);

a rotary cylinder (17, 9) surrounding the protruding part (5, 7), and rotatably supported by the protruding part (5, 7);

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a rotating shaft (6) vertically extending from a center of the rotary cylinder (17, 9), and installed in the rotary cylinder (17, 9) to rotate along with the rotary cylinder (17, 9), thus transmitting mechanical energy produced by rotation of the rotary cylinder (17, 9) to a power generator (8);

an upper bearing (12) installed on the protruding part (5, 7) to be positioned between the rotary cylinder (17, 9) and the protruding part (5, 7), and supporting rotation of the rotary cylinder (17, 9);

a lower bearing installed (2) on the lower base block (1) to be positioned between the rotary cylinder (17, 9) and the lower base block (1), and supporting a lower portion of the rotary cylinder (17, 9).

6. Gallagher does not disclose a plurality of vanes installed along an outer circumference of the rotary cylinder at regular angular intervals, the vanes being opened outwards relative to the rotary cylinder or closed to be in close contact with the outer circumference of the rotary cylinder, according to a position relative to a wind direction; and angle limiting means to prevent each of the vanes from being opened beyond a preset angle.

7. Coloney teaches a plurality of vanes (B, C) installed along an outer circumference of a rotary cylinder at regular angular intervals, the vanes (B, C) being opened outwards relative to the rotary cylinder or closed to be in close contact with the outer circumference of the rotary cylinder, according to a position relative to a wind direction (b); and

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angle limiting means (D) to prevent each of the vanes (B, C) from being opened beyond a preset angle.

8. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a plurality of vanes (B, C of Coloney) installed along an outer circumference of a rotary cylinder at regular angular intervals, the vanes (B, C of Coloney) being opened outwards relative to the rotary cylinder or closed to be in close contact with the outer circumference of the rotary cylinder, according to a position relative to a wind direction (b of Coloney); and

angle limiting means (D of Coloney) to prevent each of the vanes (B, C of Coloney) from being opened beyond a preset angle as taught in Coloney with the apparatus disclosed by Gallagher for the purposes of increased turbine efficiency.

9. In re claim 2 the Gallagher modification in re claim 1 discloses the wind turbine according to claim 1, wherein each of the vanes (B, C of Coloney) comprises:
a frame having a rectangular shape, and having a plane structure which is bendable to have a curvature radius corresponding to a radius of the rotary cylinder, a first side of the frame being hinged to the rotary cylinder so that the frame is closed to be in close contact with the outer circumference of the rotary cylinder or is opened to protrude outwards relative to the rotary cylinder; and
cloth or artificial leather installed in the frame to cover an interior of the frame (lines 29-37 of Coloney).

10. In re claim 3 the Gallagher modification in re claim 1 discloses the wind turbine according to claim 1, wherein the angle limiting means (D of Coloney) comprises a rope

(line 53 of Coloney) which is made of fiber and couples the rotary cylinder to a second side of each of the vanes (B, C of Coloney).

11. In re claim 4 the Gallagher modification in re claim 1 discloses the wind turbine according to claim 1, wherein each of the vanes comprises cloth, the cloth being fastened at a first side, an upper side, and a lower side thereof to the rotary cylinder via fastening means, and a second side of the cloth opposite the first side thereof comprises an open end and is longer than the first side, so that, when the open end is positioned in a direction facing a wind, the cloth is expanded and rotates the rotary cylinder by wind force, and, when the open end is positioned in a direction which does not face the wind, the cloth is contracted and reduces rotational resistance of the rotary cylinder (figures 2 and 3 and lines 29-50 of Coloney).

12. Claim 6 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over the Gallagher modification in re claim 1.

Coloney discloses the angle limiting means as rope (figure 2 and line 53 of Coloney). However, Coloney does not expressly disclose the use of support cloth as angle limiting means.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to use cloth instead of rope because Applicant has not disclosed that using cloth as opposed to rope provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with rope because it would have the same characteristics as

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cloth in its use and is capable of performing the function equally as well. Therefore, it would have been an obvious matter of design choice to modify the Gallagher modification in re claim 1 to obtain the invention as specified in the claim.

Allowable Subject Matter

13. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Numbers 1478, 4517, 82307, 98392, 99980, 113284, 302769, 840208, 893790, 1139103, 3371718, 3743848, 3938907, 3995170, 4004861, 4048947, 4095422, 4218183, 4424451, 4457669, 4468169, 4545729, 4618312, 5051059, 5098264, 6242818, 6499939 and 6749394, US Patent Application Numbers 2004/0001752, 2004/0057830 and 2005/0263057 as well as GB 2067670 and KR 10-1983-0008035 all disclose vanes moveable based on the direction of fluid flow. US Patent Numbers 4057270, 6417578, 6448668 and 6870280 all disclose a vertical wind turbine with a bearing structure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron R. Eastman whose telephone number is (571)270-3132. The examiner can normally be reached on Mon-Thu 9:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron R. Eastman/
Examiner, Art Unit 3745

/Edward K. Look/
Supervisory Patent Examiner, Art Unit 3745